

valid, no matter what may happen. In many instances the original type specimen became lost — what has to be done in that case will be discussed later. In earlier days particularly, new species were described without knowledge of the place where the type specimen was collected. If at a later date the same species is again found alive, it is then the prerogative of the first person aware of the fact that no original type locality is known, to designate a type locality on the basis of the new find.

The word typical is used correctly in taxonomic writing only to refer to matters which are like the "type". It is never to be used as a synonym for type. In fact, it is conceivable that the type specimen may not be typical for the species but be actually one of possibly many extreme variants. This applies especially to type localities. As pointed out, the type locality is the geographical location whence the type specimen comes. This location may be at the very extreme of the range of a species, where only a rare representative may be picked up. The typical location would be about in the middle of the total range of distribution of the species. But the literature is full of type localities which are not typical. It is not permissible to change the "type locality" of a species simply because the typical locality is elsewhere. The only situation under which a "type locality" may ever be changed would be one where it can be shown conclusively that the original designation of the type locality was in error and that the type specimen indeed came from a locality different from the one originally stated. Such situations did actually arise in some of the earlier expeditions when bottles may have become mixed up during a long voyage and the describer, who most likely was not on the voyage, had to rely on the information supplied him. We have, for example, Hawaiian species of mollusks described as from California, just as there are species collected in the Azores listed with "California" as type locality (or "Habitat" as it was called in earlier years).



## Methods & Techniques

### A Method for Collecting Limpets, Slippershells and Similar Forms

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While shore collecting at San Luis Gonzaga Bay, Baja California, a few years ago I found an exceptionally well preserved specimen of Crucibulum scutellatum attached to a rock estimated to weigh five to ten pounds.

After unsuccessfully attempting to remove the shell I placed the rock in my collecting bag, but it wasn't long until the extra weight was more than I wanted to continue to carry. It then occurred to me that perhaps the shell would move if given the proper stimulus, so after inverting the rock I held the shell in the flame of a match. After the fifth match the animal did move and was easily detached from the rock.

More recently, while on a collecting trip to Puertocitos, Baja California, with Dr. Bruce Campbell, I had an opportunity to try a modification of the "heat" treatment.

Dr. Campbell carries a small propane cylinder in his repair kit for use as a soldering torch. When the flame of this was gently directed at several species of small limpets the steam generated between the animal and the shell literally blew the shell off, leaving the animal still attached to the rock. Examination failed to reveal damage to the shell.

This method is especially helpful in removing shells nestled in depressions or crevices in the rocks.

